

What is claimed:

Claims 2 to ~~6~~, 11 to 13, 16, 19, 23, 27 to 30 and 39 to 41 (cancelled)

Claim 1. (currently amended) A multi-point seat belt ~~tfor~~ for increasing survival chance for ~~of a~~
5 ~~passenger of a transport system in the event of an accident of a transport system or during or~~
~~in-flight turbulence-related vibrations of an aeroplane~~, comprising

a first and second shoulder belt portion, a lap belt portion and an extending belt portions (1.1
to 1.4) and two a first and second belt ends (ELR) and (ERL), where

the extending belt portion (1.4) which, having one the second belt end (EL) of which with

10 the extending belt portion (1.4), loosely guided by a D-ringshoulder-belt-portion

deflector (5, 5b, 12) and equipped with a belt retractor (13), having a clamping device,

is arranged to attached to a stiff fourth vehicle-body-transport-system member, generally

representing a body-floor of the transport system adjacent to a second seat-side or a

seat-backrest frame at the second seat-side or a post section of a motor vehicle adjacent

15 to the second seat-side or a floor (6) thereof, and;

the first shoulder belt portion (1.1), an end portion of which having the first belt end (ER)

is arranged to attached to a stiff third transport-system member, generally representing

the floor of the transport system adjacent to a first seat-side or the seat-backrest frame

at the first seat-side;

20 a main buckle assembly (9.1) having a master release button (84), adjacent to one side of the

seat frame (3.3, 3.3a to 3.3d) and arranged to attached to the floor (6) a stiff first

transport-system member, generally representing the floor of the transport system adjacent

to the first seat-side or a seat-cushion frame at the first seat-side or a mid-tunnel of the

motor vehicle adjacent to the first seat-side;

25 at least two one latch plates (2, 2a, 9, 11, 25);

a lower belt deflector (17) which, adjacent to the other side of the seat frame and arranged to

attached to the floor (6) a stiff second transport-system member, generally representing the

floor (6) of the transport system adjacent to the second seat-side or the seat-cushion frame

at the second seat-side or the post section adjacent to the second seat-side or a side rail of

30 the motor vehicle adjacent to the second seat-side, deflects and loosely guides the first and

lap belt portion (1.1, 1.3) and the first shoulder belt portion (1.1); and

at least one upper buckle assembly (4, 4b, 4c, 4e, 14, 14a, 18, 18a, 18b, 18.1 to 18.3) arranged to a side (SR) of a seat backrest; a belt-feeding device, provided with an operating arm (20.2), to a first end of which a belt ring (20.8) is rigidly attached to receive and loosely guide the first shoulder belt portion and a second end is connected to a guide tube (20.1), pivotally attached to a bearing casing (20.10) of the seat-backrest frame;

whereby

a lower body-part of his-a body (96) of the passenger and an upper body-part (95) are restrained by the lap-belt portion (1.3) and the second shoulder belt portion (1.2) when the main latch plate (9), moveable along the lap- and second shoulder belt portion, is plug-in connected to the main buckle assembly (9.1); and

the upper body-part is restrained by the first and second shoulder belt portion, both (1.1, 1.2) extending crosswise in an X-shape when the shoulder latch plate (2), fastened to the other belt end (ER) of the first shoulder belt portion (1.1), is plug-in connected to the upper buckle assembly upon a rotatory movement of the operating arm with the first shoulder belt portion from a resting position at the second seat-side to an operative position at the first seat-side.

Claim 142. (currently amended) The multi-point seat belt according to claim 51, further comprising at least one drive apparatus, which, provided for at the belt-feeding device (20a, 20b) consisting of, when activated, rotates the operating arm with the first shoulder belt portion from the resting position to the operative position or vice-versa.

a belt housing (20.4a) equipped with the shoulder latch plate (2) of the first shoulder belt portion (1.1);

an operating arm (20.2a), to one end of which is connected the belt housing and the other end is connected to a guide tube (20.1) pivotally attached in a supporting tube (3.61) of a head rest (3.6a); and

at least one drive apparatus to rotate the operating arm with the belt housing;

whereby the shoulder latch plate (2) is inserted into and connected to the upper buckle assembly (4, 14, 18) and the first shoulder belt portion is moved from the resting position to the operating position by rotatory movement of the operating arm when the drive apparatus is activated.

Claim 73. (currently amended) The multi-point seat belt according to claim 52, wherein the master release button (84) is provided with release cables (4.2) connecting to release buttons.

of the buckle assemblies where the master release button, when depressed, releases all the main latch plates from the respective buckle assemblies and returns the belt-feeding device to the resting position.

5 Claim ~~184~~. (currently amended) The multi-point seat belt according to claim ~~143~~, wherein the master release button (84) is provided with ~~release wires connected to electrical release motors (4.2b) of release buttons of the buckle assemblies and~~ a release wire connected to the drive apparatus where the master release button, when depressed, releases all the main latch plates from the respective main buckle assemblies and returns the belt-feeding device to the resting position.

10 Claim ~~205~~. (currently amended) The multi-point seat belt according to claim ~~21~~, wherein the multi-point seat belt (1, 1a to 1d) consists of a three-point seat belt (1e); and an additional upper first shoulder belt (1.12),

15 to the a first belt end of which is provided with a transition buckle assembly (4e), having a transition release button (84c), in a home position is located on a seat-backrest aperture of the seat backrest at the first seat-side, attached and the other a second belt end is arranged in attached to the side (SR) of the seat-backrest frame at the first seat-side; and

where

20 a transition latch plate (2) is ~~is~~ arrtangled to thea first belt end of a lower first shoulder belt portion (1.11) of the three-point seat belt (1e); and

whereby

25 in a coupling position the passenger is restrained by plug-in connection of the main latch plate (9)the transition latch plate (2) is plug-in connected with to the main buckle assembly (9.1) and of the transition latch plate (2) with transition buckle assembly (4e), pulled out from the seat-backrest aperture, therethrough a transition portion of the upper first shoulder belt is projected, where the lower first shoulder belt portion (1.11) projects through the lower belt deflector (17) at a sufficient length (l₁) needed for the belt retractor to retract the first shoulder belt portion of the restrained passenger, defined by the lower first shoulder belt portion and the transition portionthe additional shoulder belt, in a real-world the accident.

30

Claim ~~216~~. (currently amended) The multi-point seat belt according to claim ~~205~~, wherein the ~~other second~~ end of the ~~additional upper first~~ shoulder belt (1.12) is provided with a second belt retractor (13a), which, ~~arranged in attached to the side (SR) of the seat-backrest frame (3.2) at the first seat-side~~, has a spring force, which is less than ~~that of the belt retractor (13)~~,
5 (13),

whereby

in the coupling position the belt retractor pulls the upper first shoulder belt out from the second belt retractor through the seat-backrest aperture or
in the home position the transition buckle assembly (4e), released by depressing the transition release button, is pulled by the second belt retractor until being located on the seat-
10 backrest aperture.

Claim 7. (new) The multi-point seat belt according to claim 5, wherein the transition buckle assembly is provided with an electrical release-motor (4.2b), which, when receiving an electrical signal from the main buckle assembly resulting from depressing the main release
15 button releasing the main latch plate, pulls the transition release button to release the transition latch plate.

Claim 8. (currently amended) The multi-point seat belt according to claim ~~71~~, wherein the lower belt deflector (17) comprises a housing, having an attachment hole, and a pin (17.1), attached in the housing to form an aperture which loosely guides the belt portion~~retains the~~
20 ~~shoulder latch plate (2) when released.~~

Claim 9. (original) The multi-point seat belt according to claim 8, wherein the pin (17.1) is surrounded by a sleeve (17.2).

Claim 10. (original) The multi-point seat belt according to claim 9, wherein the lower belt deflector (17) is made of one piece.

25 Claim ~~3111~~. (currently amended) The multi-point seat belt according to claim ~~43~~, further comprising a ~~belt feeding device (20), belt feeding members of which in the resting or operating position are countersunk in the seat backrest, where the belt feeding device consists of~~

an operating arm (20.2), to one end of which a belt ring (20.8), having a key, is rigidly attached to the belt ring of the operating arm; and to house and loosely guide the first shoulder belt portion (1.1) and to the other end a guide tube (20.1) is rigidly attached; the guide tube (20.1), which, pivotally attached to a bearing casing (20.10) of a, is rotated from the resting position to the operating position by at least one drive apparatus, when activated; and

a belt-feeding plate (20.9, 20.9a), a contact portion of which, moveable in an opening of the seat backrest at the first seat-side and guided thereby located on a top edge of the backrest at the side (SR) thereof, has a receptacle through which the key projects in a contact position and the operating position;

whereby the drive apparatus, being activated,

moves up over a head rest the contact portion of the belt-feeding plate out of the opening and the guide tube with the operating arm and with the first shoulder belt portion;

rotates the operating arm and the first shoulder belt portion over the head rest, a head of the passenger and in front of the upper body-part of his body until the key engages with the receptacle in the contact position and

countersinks the contact portion belt-feeding plate and the guide tube with the operating arm in the seat backrest until reaching the operating position in which the first shoulder belt portion extends across over the upper body-part of the body and the drive apparatus is switched off;

where in the operative position or in the resting position the contact portion of the belt-feeding plate and the guide tube with the operating arm are countersunk in the seat backrest.

Claim 1712. (currently amended) The multi-point seat belt according to claim 1411, wherein the operating arm (20.2a) is a radial-adjustable tube (20.3) is attached between the belt ring and the guide tube, where the first shoulder belt portion is moved from the resting position to the operating position by a radial-adjusting movement of the radial-adjustable tube when the drive apparatus is activated.

Claim 3713. (currently amended) The multi-point seat belt according to claim 3411, wherein the drive apparatus is operable to return the first shoulder belt portion (1.1) from the operating position to the resting position, when a dwell time, predetermined for an engagement of the key with the receptacle, is exceeded.

Claim ~~15~~14. (currently amended) The multi-point seat belt according to claim ~~14~~11, wherein the drive apparatus returns the first shoulder belt portion (1.1) from the operatingve position to the resting position, when a dwell time, predetermined for insertieng of the shoulder-main latch plate (~~2~~) into the main upper-buckle assembly (~~4, 4a to 4c, 14, 14a, 18~~), is exceeded.

5 Claim ~~33~~15. (currently amended) The multi-point seat belt according to claim ~~31~~11, wherein the drive apparatus, activated in response to activating a switch, attached in the main buckle assembly (9.1), upon contact with a cam of the main latch plate (9), when inserted therein, is switched off when the operatingve position is reached.

10 Claim ~~34~~16. (currently amended) The multi-point seat belt according to claim ~~31~~11, wherein the drive apparatus, activated in response to starting an engine of the transport system, is switched off when the operatingve position is reached.

Claim ~~35~~17. (currently amended) The multi-point seat belt according to claim ~~31~~11, wherein the drive apparatus, activated in response to closing a vehicle door of the transport system, is switched off when the operativeng position is reached.

15 Claim ~~32~~18. (currently amended) The multi-point seat belt according to claim ~~31~~11, wherein the drive apparatus, activated in response to actuating a switch, is switched off when the operatingve position is reached.

20 Claim ~~36~~19. (currently amended) The multi-point seat belt according to claim ~~31~~11, wherein the drive apparatus is activated when the passenger takes his-a seat, whereto a pressure-sensor is built, where the drive apparatus is switched off when the operativeng position is reached.

Claim ~~38~~20. (currently amended) The multi-point seat belt according to claim ~~31~~11, wherein the drive apparatus, activated in response to depressing x-times the master release button (84), is switched off when the operativeng position is reached.

25 Claim ~~43~~21. (currently amended) The multi-point seat belt according to claim ~~11~~11, wherein the supplement latch plate is a belt-detachable latch plate (25), which has a quick-release pin (25.1) and a U-shaped portion to house the belt portion of the seat belt which is secured therein by the quick-release pin and detached therefrom by pulling it.

Claim 22. (new) The multi-point seat belt according to claim 21, wherein the seat backrest at the first and second seat-side is provided with pairs of supplement upper buckle assemblies (18 / 19, 18a / 19a, 18b / 19b, 18.1 / 19.1 to 18.3 / 19.3),

5 one of which is adapted to a small body proportion of the passenger, lower than the upper buckle assembly, and,
finally, the belt-detachable latch plates, housing both shoulder belt portions, are plug-in connected to that pair.

Claim 23. (new) The multi-point seat belt according to claim 22, wherein the belt-detachable latch plates, when not being used, are stored and secured in a storage box (25.5) of the seat.

10 Claim ~~26~~24. (currently amended) The multi-point seat belt according to claim ~~24~~22, wherein the belt end (~~ER~~) of the first shoulder belt portion (~~1.1~~) upper buckle assembly is provided with a coupling fitting (1.2a, 1.2b) to receive energy absorbers.

15 Claim ~~7~~25. (currently amended) The multi-point seat belt according to claim ~~5~~22, wherein the master release button (84) is provided with release cables (4.2), connecting to release buttons of all the supplement upper buckle assemblies, and with a release wire, connecting to the drive apparatus, where the master release button, when depressed, releases all the latch plates from the respective buckle assemblies and returns the belt-feeding device to the resting position.

20 Claim ~~4~~26. (currently amended) The multi-point seat belt according to claim ~~40~~25, wherein a belt-catching member (20.7, 20.7a), is attached to the seat backrest, ~~to~~ intercepts and holds at least one shoulder belt portion when being in the resting position.

Claim ~~22~~27. (currently amended) The multi-point seat belt according to claim ~~24~~, further comprising a belt feeding device (~~20, 20c, 20d~~) consisting of

25 a pair of rollover tubes (20.2b), inserted into a pair of angle fittings (26a) of a the seat-backrest frame (3.4d);

a belt housing (20.4d), in which, movable moveable along the pair of rollover tubes and guided thereby, receives and loosely guides the first shoulder belt portion-is located; and an additional drive apparatus, fastened to the belt housing and moveable moveable along a threaded spindle (20.1a), fastened to the pair of angle fittings (26a), to translatory move-
30 the belt housing;

whereby the first shoulder belt portion is moved from the resting position to the operating position by a translatory movement of the belt housing and the rotatory movement of the operating arm when ~~the both~~ drive apparatus ~~is~~ are activated.

Claim ~~2428~~. (currently amended) The multi-point seat belt according to claim ~~2327~~, wherein the translatory movement of the belt housing and the rotatory movement of the operating arm are synchronised.

Claim ~~2529~~. (currently amended) The multi-point seat belt to protect the passenger in a rollover-accident according to claim ~~2428~~, wherein the belt-feeding device (20c, 20d) serves as a protective-rollover device having the pair of rollover tubes (20.2b), along which the belt housing (20.4d), having holes to receive a pair of legs of a safety bracket (20.6), is moved in the operating position, where

~~the holes of the belt housing and holes of one of the rollover tubes (20.2b) and the holes of the belt housing~~ are aligned with each other and

in excess of a threshold value in the rollover-accident the pair of legs of the safety bracket protrudes through all the holes, block the translatory movement of the belt housing and clamp the first shoulder belt portion.

Claim ~~130~~. (currently amended) A multi-point seat belt ~~for increaseing survival chance for~~ of a passenger of a transport system in the event of an accident of a transport system or during or in-flight turbulence-related vibrations of an aeroplane, comprising

a first and second shoulder belt portion, a lap belt portion and an extending belt portions (1.1 to 1.4) and two a first and second belt ends (ELR) and (ERL), where
the extending belt portion (1.4) which, having one the second belt end (EL) of which with
the extending belt portion (1.4), loosely guided by a D-ringshoulder-belt-portion
deflector (5, 5b, 12) and equipped with a belt retractor (13), having a clamping device,
is arranged to attached to a stiff fourth vehicle body transport-system member, generally
representing a body floor of the transport system adjacent to a second seat-side or a
seat-backrest frame at the second seat-side or a post section of a motor vehicle adjacent
to the second seat-side or a floor (6) thereof, and;

the first shoulder belt portion (1.1), an end portion of which having the first belt end (ER)
is arranged to attached to a stiff third transport-system member, generally representing

the floor of the transport system adjacent to a first seat-side or the seat-backrest frame at the first seat-side;

a main buckle assembly (9.1) having a master release button (84), ~~adjacent to one side of the seat frame (3.3, 3.3a to 3.3d) and arranged to~~ attached to the floor (6) a stiff first
5 transport-system member, generally representing the floor of the transport system adjacent to the first seat-side or a seat-cushion frame at the first seat-side or a mid-tunnel of the motor vehicle adjacent to the first seat-side;

at least ~~two~~ one latch plates (2, 2a, 9, 11, 25);

a lower belt deflector (17) which, ~~adjacent to the other side of the seat frame and arranged to~~
10 attached to the floor (6) a stiff second transport-system member, generally representing the floor (6) of the transport system adjacent to the second seat-side or the seat-cushion frame at the second seat-side or the post section adjacent to the second seat-side or a side rail of the motor vehicle adjacent to the second seat-side, deflects and loosely guides the first and
lap belt portion (1.1, 1.3) and the first shoulder belt portion (1.1); and

15 at least one upper buckle assembly (4, 4b, 4c, 4e, 14, 14a, 18, 18a, 18b, 18.1 to 18.3) arranged to a side (SR) of a seat backrest a belt-feeding device, consisting of a pair of rollover tubes (20.2b), inserted into a pair of angle fittings (26a) of the seat-backrest frame (3.4d);

a belt housing (20.4d), which, moveable along the pair of rollover tubes from a resting
20 position at the second seat-side to an operative position at the first seat-side and guided thereby, receives and loosely guides the first shoulder belt portion; and
a drive apparatus, fastened to the belt housing and moveable along a threaded spindle (20.1a), fastened to the pair of angle fittings (26a);

whereby

25 a lower body-part of his a body (96) of the passenger and an upper body-part (95) are restrained by the lap-belt portion (1.3) and the second shoulder belt portion (1.2) when the main latch plate (9), moveable along the lap- and second shoulder belt portion, is plug-in connected to the main buckle assembly (9.1); and

the upper body-part is restrained by the first and second shoulder belt portion, both (1.1, 1.2)
30 extending crosswise in an X-shape when the shoulder latch plate (2), fastened to the other belt end (ER) of the first shoulder belt portion (1.1), is plug-in connected to the upper buckle assembly upon a translatory movement of the belt housing with the first shoulder

belt portion from the resting position to the operative position in response to the drive apparatus being activated.